<table>
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<tr>
<th>Class Level: 5</th>
<th>Topic: Recycling</th>
<th>Class Length: 3 hrs.</th>
<th>Date:</th>
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<td><strong>Lesson Objectives:</strong></td>
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<tr>
<td>• Hold group discussions on strategies for effective waste management</td>
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<td>• Learn vocabulary associated with recycling</td>
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<td>• Know municipal recycling regulations</td>
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<td>• Integrate opposing opinions about an issue (recycling) into a paragraph</td>
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<th>Language Skill Proficiency:</th>
<th>Materials and Equipment:</th>
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<td>• Speaking</td>
<td>• The 3Rs of Waste Management</td>
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<td>• Listening</td>
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**Warm Up:** Write on the board *Reduce, Reuse, Recycle.* Ask Ss if they have heard or seen this phrase and explain that it is often used in the U.S. as a strategy in waste management. Ask Ss what it means to them. Have Ss get into small groups. Have Ss race to make three lists of item: items that we can reduce our consumption of (ex. plastic grocery bags); items we can reuse (ex. flower pots); and, items we can recycle (ex. soda cans). After 10 minutes have groups share lists and see which group came up with the most items per category. Encourage Ss to debate choices if they feel there is an item that was mislabeled (ex. “What? Pizza boxes! My neighbor told me we aren’t allowed to recycle pizza boxes.”).

**Introduction:** Tell Ss that today’s lesson will focus on recycling. Ask Ss how many of them recycle—why or why not? Ask Ss if recycling is widely accepted in their native countries. Have Ss compare observations or experiences with recycling between the U.S. and their native countries.

**Presentation:** Write the following terms on the board and go over as a class: *generate, conserve, disposal, donate, containers, give away, yard sale, raw materials, recycled materials, from scratch, landfill.* Provide Ss with meanings and have class create a sample statement/question for each term.

**Practice:** Put Ss in groups of 3. Provide each S with a description of one the 3Rs (See: Description: The 3Rs of Waste Management). Have Ss take turns reading to one another information about the 3Rs in groups as a jigsaw activity. As Ss listen to peers read, have Ss complete the comprehension questions (Comprehension Questions: The 3Rs of Waste Management). Go over answers as a class.

**Practice:** Point out that different municipalities/areas have different recycling regulations. Ask Ss if they are aware of the recycling regulations for Raleigh. Provide each Ss with a recycling quiz. Have Ss complete and go over as a class.

**Practice:** Explain to Ss that some municipalities have made recycling a requirement (ex. San Francisco, Seattle and even the state of Connecticut). Write two headings on the board: Support and Disagree. Have Ss get into groups based on their opinions of whether recycling should be mandatory. NOTE: If all Ss share a stance, have some Ss agree to defend the opposing view. Have Ss spend several minutes in their groups listing arguments that support their stance. Have groups then share their opinions and supporting arguments with the class.

**Practice:** Using information reviewed during the class (including Ss arguments from previous activity), have Ss write a paragraph answering the question *Should Recycling be Mandatory?* Have Ss discuss both points of view in their paragraph.

**Evaluation:** Have Ss share their paragraphs with the class.

**Extension Activities:**

• Have Ss create a flier explaining recycling to newcomers in Raleigh.
• Have Ss write a letter to a facility (ex. apartment manager) explaining why recycling should be provided onsite. NOTE: Many low-income apartment communities do not offer recycling.
The 3Rs of Waste Management

Reduce

Solid waste reduction is critical. Americans generate an average of 4.5 pounds of waste per person each day! Source reduction or waste prevention helps to conserve resources, reduce greenhouse gas emissions, conserve energy and reduce the costs related to waste handling and disposal. Source reduction/waste prevention is a priority for the U.S. Environmental Protection Agency (EPA).

Ways to practice waste prevention include reusing, donating, buying in bulk, reducing packaging and redesigning products. Good source reduction practices include, donating items, buying in bulk, borrowing or renting infrequently used items, reusing containers and repairing/maintaining durable items.

Over the past twenty-five years, a 17 gram reduction in the weight of each two-liter plastic bottle has resulted in a 250 million pound reduction of plastic per year in the solid waste stream. When a fast-food restaurant reduced its napkin size by an inch, the solid waste stream was reduced by 12 million pounds of paper! A switch to lighter-weight containers in 1999 conserved 3,200 tons of cardboard. Source: www.epa.gov

Reuse

When we reuse an item which would have normally found its way into the solid waste stream, we save energy and save natural resources. For example, we can use containers that once held food for other storage, planters and crafts. Reusing, however, can also mean giving away items to friends or neighbors who can use the items. Donating to churches and other community charities are additional ways to reuse items rather than throwing them away and adding them to the waste stream.

Buying and selling items through yard sales also helps to reduce the waste stream and save energy. Sharing yard equipment and tools with neighbors is also a way to reduce. Teachers can reuse items to create classroom crafts, collages, montages and posters. Having an art show to display student creativity sparks viewer imagination for reusing items. Reusing items is a valuable way to reduce the solid waste stream. Source: www.epa.gov

Recycle

Recycling includes collecting, sorting and processing certain solid waste into raw materials for remanufacture into new items. When consumers purchase products manufactured from recycled material, they close the recycling loop. Glass, aluminum, plastic, newspaper and cardboard, are among the most commonly recycled items. Recycled glass can be used over and over. It has been used for road filler and roadway asphalt. Aluminum beverage containers can be recycled into new cans within 90 days. Our entire commercial air fleet could be rebuilt from the aluminum cans Americans throw away every three months. By recycling aluminum cans, we can save 95% of the energy needed to make a new aluminum can from scratch.

Recycling, including composting, diverted 79 million tons of material away from disposal in 2005, up 15 million tons in 1980, when the recycle rate was just 10% and 90% of MSW was being combusted with energy recovery or disposed of by landfilling.

Batteries are recycled at a rate of 99%; paper and paperboard at 50%, and yard trimmings at 62%.

Businesses, governments and community members recycle. When participating in a recycling program, it is important to observe your community’s recycling procedures. For example, you may need to sort your items and place them in specially-marked containers or bins. Encourage neighbors, friends and classmates to recycle.

Remember that buying products made from recycled materials saves energy, conserves resources and encourages manufacturers to use recycled material. Products made from recycled content perform just as well as those manufactured from non-recycled raw materials. Every day, more new products are being manufactured from recycled materials. Source: www.epa.gov
Directions: Listen to your classmates describe the 3Rs. Answer the questions based on the information you hear.

Reduce:

1. How many pounds of waste do Americans generate every day?

___________________________________________________________________________________________

2. What can we do to reduce waste?

___________________________________________________________________________________________

3. What happened when a fast-food restaurant made its napkins smaller?

___________________________________________________________________________________________

Reuse:

4. What effect does reusing an item have on the environment?

___________________________________________________________________________________________

5. What are examples of ways we can reuse items?

___________________________________________________________________________________________

6. Why are yard sales helpful for waste management?

___________________________________________________________________________________________

Recycle:

7. What are the most commonly recycled items?

___________________________________________________________________________________________
8. What can recycled glass be used as?

9. How many tons of material was recycled in 2005? In 1980? What does this say about attitudes toward recycling?

10. Why is it important to buy products made from recycled materials?
How much do you know about recycling in Raleigh?

1. Which of the following cannot be recycled?
   A. Milk containers
   B. Plastic water bottles
   C. Glass jars
   D. Pizza boxes
   E. None of the Above

2. When is yard waste (limbs, leaves, etc.) collected?
   A. Once per month (must be in a separate container)
   B. Every other week (must be in a separate container)
   C. Every week (must be in a separate container)
   D. Yard waste must be dropped off at local waste management centers
   E. Burning of yard waste is recommended

3. How must items be organized in the recycling bin?
   A. Items do not have to be separated and should be loose inside the recycling container
   B. Different types of items must be in separate bins (paper items together, etc.)
   C. Items may be in same bin but bagged separately
   D. Different types of items are picked up on different weeks (Plastics the first week, etc.)
   E. Place recycling items with trash. Workers at the waste management center will sort.

4. What type of plastics can be recycled in Raleigh?
   A. All plastic containers as long as they are rinsed
   B. All bottle-shaped plastic with a neck (top is smaller than body)
   C. Only beverage containers
   D. All plastic food containers (no cleaners such as laundry soap)
   E. Raleigh doesn’t recycle plastic

5. What is a “bulky load”?
   A. When the trash truck is full and cannot complete its pick ups
   B. A trash can that is overflowing
   C. A trash can that includes recyclable items
   D. A trash bag that is torn
   E. A free special collection for items too large to fit in trash can. Must be arranged with waste management center in advance.

6. Can I throw old medicine in the garbage?
   A. Yes, as long as it’s expired.
   B. Yes, as long as it’s sealed.
   C. No, put it in your recycling can.
   D. No, there are special recycling events for medicine. Ask your pharmacy.
   E. Only if it’s not a prescription medicine.

7. Can I recycle light bulbs?
   A. Yes, as long as they are not broken.
   B. Yes, place them with glass recycling items.
   C. Only if they are burned out.
   D. No, they could break in the trash truck.
   E. No, light bulbs can contain a small amount of mercury (a known poison). Handle them with care and recycle them at your local Lowes or Home Depot stores.
8. When is curbside recycling pick up in Raleigh?
A. Recycling is picked up every other week on your scheduled day.
B. Every week on your scheduled day along with trash and yard waste.
C. Recycling is picked up every Monday in Raleigh.
D. Curbside recycling will start in 2015 in Raleigh.
E. Curbside recycling is by appointment only.

8. Which of the TWO following metal items CAN I recycle?
A. Aluminum foil if rinsed
B. Hangers
C. Paint cans if rinsed
D. Aerosol cans if rinsed
E. Beverage cans if rinsed

9. Which of the following statements is FALSE?
A. Lightly rinse all food and beverage containers.
B. Steel lids need to be placed inside of the cans for safety.
C. Plastic bags can be recycled through curbside services.
D. Cardboard must be broken down to less than 3’ X 3’ in size.
E. Plastic beverage rings are recyclable.

10. Which address is NOT a recycling drop off center?
A. 2405 Wade Avenue
B. 8101 Glenwood Avenue
C. 400 W. Peace Street
D. 900 New Hope Road
E. 1234 Trash Rules Road